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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,894	11/08/2001	Robert P. Basil	0960-021	4228

7590  
John L. Doughly  
ARRIS International Inc.  
3871 Lakefield Drive  
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04/18/2007

EXAMINER
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DOAN, TRANG T

ART UNIT	PAPER NUMBER
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2131

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/010,894

Applicant(s)

BASIL ET AL.

Examiner

Trang Doan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 is/are allowed.
- 6) ☒ Claim(s) 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/26/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/22/2007 has been entered.
2. Claims 1, 3, 5-7, 9-10 and 12-15 have been amended.
3. Claims 1-22 are pending in this application.

### ***Claim Objections***

4. Regarding claim 19, the limitation "store key created by the second device" is unclear. For purpose of the examination, the Examiner interprets as "the stored key". Appropriate correction is required.
5. Additionally to claim 19, the limitation "store key created by the first device", step E, is unclear. The Examiner interprets as "store the new key created by the first device". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 19 recites the limitation "the scrambled portion" in line 8. There is insufficient antecedent basis for this limitation in the claim. Additionally to claim 19, the limitation "create a new key created at the "

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jam et al. (US Patent 5787483) (hereinafter Jam) in view of Salganicoff (US Patent 5734720) (hereinafter Salganicoff).

11. Referring to claim 19, Jam teaches:

A. Unscramble the scrambled portion of the incoming packet with a stored key created by the first device and a stored key created by the second device (Jam: column 26 lines 12-25);

B. Store key created by the second device received in the scrambled portion of the incoming packet (Jam: column 24 lines 30-56);

C. Create a new key created at the first device and include the new key in an outgoing packet from the first device (Jam: column 14 lines 58-67 and column 15 lines 34-58 and column 25 lines 19-30, column 26 lines 17-25, column 34 lines 12-42 and column 27 lines 34-59);

D. Scramble portions of the outgoing packet including the new key created by the first device with the stored key from the first device and the stored key from the second device (Jam: column 15 lines 34-58 and column 25 lines 19-30 and column 26 lines 17-25, column 34 lines 12-42 and column 27 lines 34-59);

E. Store key created by the first device (Jam: column 6 lines 17-22 and column 13 lines 50-53); and

F. Send outgoing packet (Jam: column 15 lines 9-58).

Jam does not explicitly disclose the communication is encrypted based on a key received in the previous communication. However, Salganicoff discloses the communication is encrypted based on a key received in the previous communication (column 43 lines 35-65). Therefore, it would have been obvious to one ordinary skill in the art to apply the teaching of one-time session key of Salganicoff into the system of Jam because the computational simplicity of the one-time session key allows it to be implementable in hardware for very fast encryption and decryption at the head end and at the set top multimedia terminal (Salganicoff: column 43 lines 60-65).

12. Referring to claim 20, Jam in view of Salganicoff teaches wherein: the stored key created by the first device used in the scrambling and unscrambling operations is the most recently stored key created by the first device, and the stored key created by the

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second device used in the scrambling and unscrambling operations is the most recently stored key created by the second device (Jam: column 26 lines 12-25).

13. Referring to claim 21, Jam in view of Salganicoff further teaches wherein the stored key created by the first device used in the scrambling and unscrambling operations is not the most recently stored key created by the first device (Jam: column 24 lines 42-56 and column 25 lines 19-30 and column 26 lines 17-25).

14. Referring to claim 22, Jam in view of Salganicoff further teaches wherein the stored key created by the second device used in the scrambling and unscrambling operations is not the most recently stored key created by the second device (Jam: column 24 lines 42-56 and column 25 lines 19-30 and column 26 lines 17-25).

***Allowable Subject Matter***

15. The following is an examiner's statement of reasons for allowance: Applicant claims each communication between the cable modem and head end, a new key is generated and transmitted with the payload of the communication. That communication is encrypted based on a key received in a previous communication from another device when one device sends a communication to the other. The closest prior art, Heer, teaches using permanent private key to encrypt packets within a session or once per week. Heer does not teach the creating and using of new unique keys for each data frame transmission/reception for encrypting/decrypting. Therefore, claims 1-18 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang Doan whose telephone number is (571) 272-0740. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Trang Doan  
Examiner  
Art Unit 2131

T.D.

CHRISTOPHER REVAK  
PRIMARY EXAMINER

